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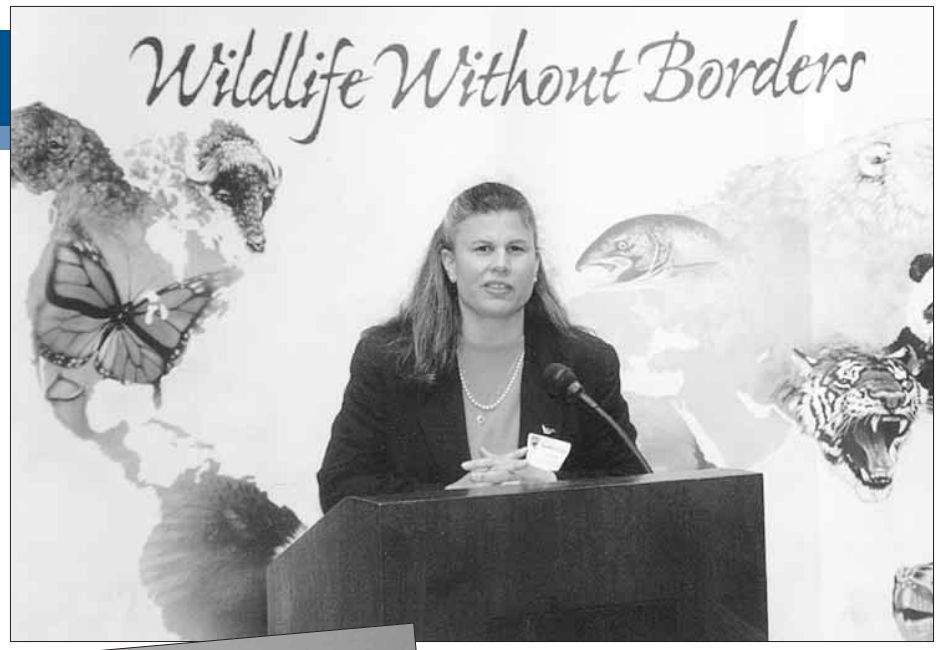
Looking to the Future



Jamie Rappaport Clark
Director, U.S. Fish and Wildlife Service

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The occasion of the Department of the Interior's 150th anniversary offers the U.S. Fish and Wildlife Service an excellent opportunity to reflect on our history, assess where we are, and articulate our vision for the future.

Today, we can celebrate our having overcome the conservation crisis of the early 1900s and the alarming declines in the populations of commercial fish, game, and waterfowl species have been, for the most part, either stemmed or reversed. At the same time, however, we need to recognize that a new crisis confronts us: the loss and fragmentation of natural habitat.

Fall and spring are the best times to see annual spectacles at national refuges that serve as waystations for waterfowl and other birds on their migrations. Above, snow geese take flight at Bombay Hook NWR in Delaware. The refuge is also an excellent place for hunting snow geese, ducks, and white-tailed deer.

In the United States, more than 50 percent of wetlands have been drained, more than 85 percent of forests have been destroyed, and 95 percent of tallgrass prairies have disappeared. Demographers predict that in the next 50 years, another 125 million people will live in the United States, which means we should expect increased human encroachment on open spaces in the future. Therefore, the steps we take today are critically important.

Despite the statistics, there is reason for optimism. Last year, we enjoyed a banner year, marked by strong and widening support on Capitol Hill and within the Administration. We saw

- passage of the National Wildlife Refuge System Improvement Act, which cast in statutory concrete the singular mission of our refuges to conserve fish, wildlife, and plants;
- the Transportation Equity Act for the 21st Century, which will deliver $100 million in refuge road maintenance over five years and will increase annual funding for aquatic resource conservation by an estimated $135 million;
- amendments to migratory bird treaties with Canada and Mexico that will improve wildlife management and fairness for the indigenous peoples who depend on migratory birds for subsistence; and
- a record $1.4 billion budget for this fiscal year.

We enjoyed growing public support as well. In 1996, 77 million people spent $101 billion on wildlife-related recreation. The stage is set for the Fish and Wildlife Service to take the spotlight in the coming century.

The scenic beauty of the Izembeck NWR, above, draws visitors from around the world. The manatee, below, are among the threatened and endangered species that find homes at refuges.

To address the problem of habitat loss and fragmentation, I have set four major conservation priorities for the future: strengthen our ecosystem approach, lift migratory bird conservation to a higher level, take a leadership role in efforts to prevent the introduction and spread of invasive species, and set the course for the future of America's magnificent National Wildlife Refuge System.

The Ecosystem Approach

Whenever we are faced with a dire species or management issue, we should recognize that it often results from an ecosystem out of balance. We should therefore try to get ahead of the curve by taking a comprehensive approach to fish and wildlife management that looks at the landscape as a whole—the natural ecological processes and the role native species play in maintaining those processes—with an eye toward identifying how people can live on the land without compromising its health. This is the ecosystem approach that the Fish and Wildlife Service has pioneered. An essential element of this approach is working with others. Partnerships are the future of conservation.

We can learn from the successes of our colleagues who have already integrated an ecosystem approach into their everyday work. Years of hard work are now paying off for the folks working on the Malpai Borderlands in southeastern Arizona, the Blackfoot Challenge in Montana, and the Ohio River watershed. The public is responding and participating. The increasing health of the resource demonstrates that success.

To move toward an ecosystem approach, the agency is changing the way it does business. The Service of the future will rally the resources and expertise of its diverse parts to create a powerful, unified effort focused on saving landscapes and their species rather than addressing species-specific issues one by one. With that vision in mind, we have created ecosystem teams around each of 53 watershed systems and, while preserving the integrity of our programs, we have restructured our organization to better address issues on specific landscapes. Through the numerous successes of our ecosystem teams, we are seeing the benefits of this approach.

Where We Are

Our Roles & Responsibilities

Nan Rollison

The U.S. Fish and Wildlife Service is the principal federal agency responsible for conserving, protecting, and enhancing fish and wildlife and their habitats for the continuing benefit of the American people. More than a hundred years ago, America's fish and wildlife resources were declining at an alarming rate. Concerned scientists, sportsmen's groups, and citizens joined together to restore and sustain our national wild heritage. This was the genesis of the Service.

Today, the Service enforces federal wildlife laws, manages migratory bird populations, restores nationally significant fisheries, conserves and restores vital wildlife habitat, protects and recovers endangered species, and helps other governments with conservation efforts. It also administers the Federal Aid program, distributing hundreds of millions of dollars annually to states for fish and wildlife restoration, boating access, hunter education, shooting ranges, and related projects. The funds come from federal excise taxes on fishing, hunting, and boating equipment.

Conserving Healthy Habitats

Habitat loss is the major reason for the decline of most of the world's fish, wildlife, and plant species. The Service helps to conserve habitat through the National Wildlife Refuge System. In addition, the agency joins with other public and private landowners to help conserve plant and wildlife ecosystems outside Service lands. To ensure the health of wildlife habitat, Service employees examine the effects of federal activities on fish and wildlife species and their habitats and monitor environmental contaminants affecting fish and wildlife.

Restoring Declining Species

The Service seeks to restore declining species through captive breeding and reintroduction, enforcing fish and wildlife laws, controlling exotic nuisance species, helping local communities with habitat conservation plans, and teaching citizens how they can help. National wildlife refuges and national fish hatcheries play a critical role in protecting and restoring depleted species.

Working With Others

Sustaining our nation's fish and wildlife resources is a task that can be accomplished only through the combined efforts of government, businesses, and private citizens. The Service works with corporate and private landowners to help conserve habitat, cooperates with other nations to halt illegal wildlife trade, and encourages volunteerism at national wildlife refuges and other locations across the country.

Education and Training

A highly trained workforce and an informed public are critical to the future of America's fish and wildlife. The Service conducts conservation training for its employees and natural resource organizations both in the United States and around the world. The Service helps sponsor recreational safety programs and provides scientific, policy, and educational information to the public.

Places for Wildlife and People

People and nature are linked through spiritual, recreational, and cultural ties. In addition to preserving habitat for wildlife and plants, the Service provides opportunities for people to have fun, relax, and appreciate the natural world. Whether through birdwatching, fishing, hunting, photography, or other wildlife pursuits, wildlife recreation contributes millions of dollars to local economies. Our fish and wildlife heritage contributes to the quality of our lives and is an integral part of our nation's greatness.

Migratory Birds

I believe our efforts to protect migratory birds may present us with one of the best opportunities to implement the ecosystem approach. When people see unhealthy bird populations, it can be a window into the world of contaminants, habitat loss, and even funding programs such as the Land and Water Conservation Fund. Birds are important indicators of environmental health. In the 1960s, the population declines of peregrine falcons and ospreys alerted us to the harmful effects of the pesticide DDT on other animals, including humans.

But now, the populations of many migratory bird species are declining mostly because of habitat loss. If we are able to protect habitat for these very mobile creatures, we will also be preserving habitat for many other species.

In the future, the health of migratory birds will be secured by protecting every habitat type in the United States. The North American Waterfowl Management Plan and the Partners in Flight program will play significant roles in enabling our partners to make this happen. Their efforts will be aided by the addition of sites to the Ramsar Convention list of wetlands and to the Western Hemisphere Shorebird Reserve Network. At the same time, we need to be innovative in our educational and outreach programs to address potential problems for migratory birds from oil pits to transmission lines to pesticide use.

Invasive Species

Invasive species are a growing challenge for natural resource managers. Already, 4,000 nonnative plants and 2,300 nonnative animals have established themselves across our country, and they keep coming. Invasive species have been a contributing factor in the decline of nearly half of all listed endangered species and they cause damages of $122 billion annually to the U.S. economy.

The Service has long been engaged in addressing invasive species issues. I expect that in the years to come, the Service will emerge in a leadership role on this issue. With our broad global scope and our mix of specialized scientific expertise, we have much to contribute in the fight to fend off these invaders.

We need a comprehensive survey of harmful invasive species populations on all lands that are managed by the Service and on terrestrial and aquatic biodiversity hot spots, with priority control actions identified for each species. Our refuges and hatcheries should be safe havens for native species that are elsewhere losing out to invasives. Prevention and control efforts undertaken cooperatively through the Aquatic Nuisance Species Task Force, such as those to prevent the western spread of the zebra mussel beyond the 100th meridian, need to be accelerated. The Service must consider what new authorities might be needed to adequately address this growing issue. The battle against nonindigenous species should be a priority for funding through Partners for Fish and Wildlife, a program that forges partnerships with private landowners. Rooting out invasives is the first step to bringing back the natives.

The National Wildlife Refuge System

America has placed its trust in the Service to manage the National Wildlife Refuge System. Our refuge system is the only network of lands in the world set aside exclusively for the conservation of fish and wildlife. The incredible diversity and magnificent beauty of our land base and the expanse of public uses of those lands have made the refuge system the envy of our international colleagues. We need to maintain our excellent land base in the face of an impending human population boom.

Last October, for the first time ever, all our refuge managers gathered under one roof at Keystone, Colorado, for the National Wildlife Refuge System Conference. The conference provided a venue to exchange ideas and to plot a future for the system. Three topics of discussion that emerged at the conference are going to be particularly crucial in the coming years. We must improve our ability to identify and acquire essential habitat for the National Wildlife Refuge System. We must develop a strong and clear policy on compatible uses that will help protect the refuge system from misuse and overuse. And we must build a more systematic recruitment, training, and mentoring program.

The end result is an image of a National Wildlife Refuge System with wildlife corridors and other elements that meet the needs of the plants and animals that live on our lands. Our refuges will also be places where people can go for recreation and to commune with nature. In an increasingly crowded world, they will be the places where one can still "get away from it all." And people working on refuges will reflect the rich mix of cultures that makes this country great so that we will be able to relate to all segments of the public.

For wildlife conservationists, the future is full of challenges. Just as our forebears persevered when they faced a crisis, we must do likewise and use their example to draw inspiration and confidence for the task ahead. Let us not lose track of our desire for the future of wildlife: expanses of natural habitat anchored by the solid example of a wildlife refuge with human neighbors engaged in conservation. If we focus, the vision will emerge: a landscape full of its native fish, plants, and wildlife that defines and renews the American spirit.

Looking Back

Kevin Kilcullen

Although relatively new to the Department of the Interior, the Fish and Wildlife Service's programs are among the oldest in the world dedicated to the conservation of natural resources.

The Service traces its origins to the U.S. Commission on Fish and Fisheries in the Department of Commerce and the Division of Economic Ornithology and Mammalogy in the Department of Agriculture. Both programs were created to help stem the dramatic decline of the nation's fish and wildlife resources during the last quarter of the 19th Century.

The agency's 125-year history has closely mirrored the American public's growing concern with conservation and environmental issues.

1871 Congress creates the U.S. Commission on Fish and Fisheries in the Department of Commerce and charges it with studying and recommending solutions to the decline in food fishes and to promote fish culture. **Spencer Fullerton Baird** is appointed the first commissioner. A year later, the commission's Baird Station in northern California is used to collect, fertilize, and ship salmon eggs by rail to the East Coast.

1885 Division of Economic Ornithology and Mammalogy is established in the Department of Agriculture. With **Clinton Hart Merriam** as its first chief, much of the division's early work defines the geographical distribution of animals and plants throughout the country and studies the positive effects of birds in controlling agricultural pests. The division later expands and is renamed the Bureau of Biological Survey.

1900 The Lacey Act becomes the first federal law protecting game, prohibiting the interstate shipment of illegally taken wildlife and importation of species. Enforcement of the act becomes the responsibility of the Biological Survey.

1903 The first Federal Bird Reservation is established by President Theodore Roosevelt on Pelican Island, Florida, and placed under the jurisdiction of the Biological Survey. Pelican Island and other early federal wildlife reservations are redesignated "national wildlife refuges" in 1942.

1918 The Migratory Bird Treaty Act is passed implementing the Convention Between the United States and Great Britain (for Canada) for the Protection of Migratory Birds. The act, a landmark in wildlife conservation legislation, provides for the regulation of migratory bird hunting.

1930s Thousands of workers in the Civilian Conservation Corps and Works Progress Administration improve habitat and build the infrastructure of more than 50 national wildlife refuges and fish hatcheries.

1934 **Jay Norwood** (**"Ding"**) **Darling** is appointed chief of the Bureau of Biological Survey. Darling's brief tenure results in a new and ambitious course for the agency to acquire and protect vital wetlands and other habitat throughout the country. He is also known for designing the first Duck Stamp.

1934 The Migratory Bird Hunting Stamp Act, popularly known as the "Duck Stamp Act," is passed by Congress. The act requires waterfowl hunters to purchase a stamp. Revenue generated by the stamp is used to acquire important wetlands. Since its inception, the program has resulted in the protection of 4.5 million acres of waterfowl habitat.

1937 The Federal Aid in Wildlife Restoration Act, commonly known as the Pittman-Robertson Act, is passed by Congress to provide funding for the selection and improvement of wildlife habitat, improving wildlife management research, and distributing information.

1939 The Bureaus of Fisheries (Commerce Department) and Biological Survey (Agriculture Department) are moved to the Department of the Interior and, in 1940, combined to create the U.S. Fish and Wildlife Service.

1946 In response to amendments to the Fish and Wildlife Coordination Act, the service establishes a River Basins Study program to help minimize and prevent damage to fish and wildlife resulting from federal water projects.

1947 The Service officially establishes a program recognizing North America's four migratory bird flyways in an effort to improve the management of migratory waterfowl hunting.

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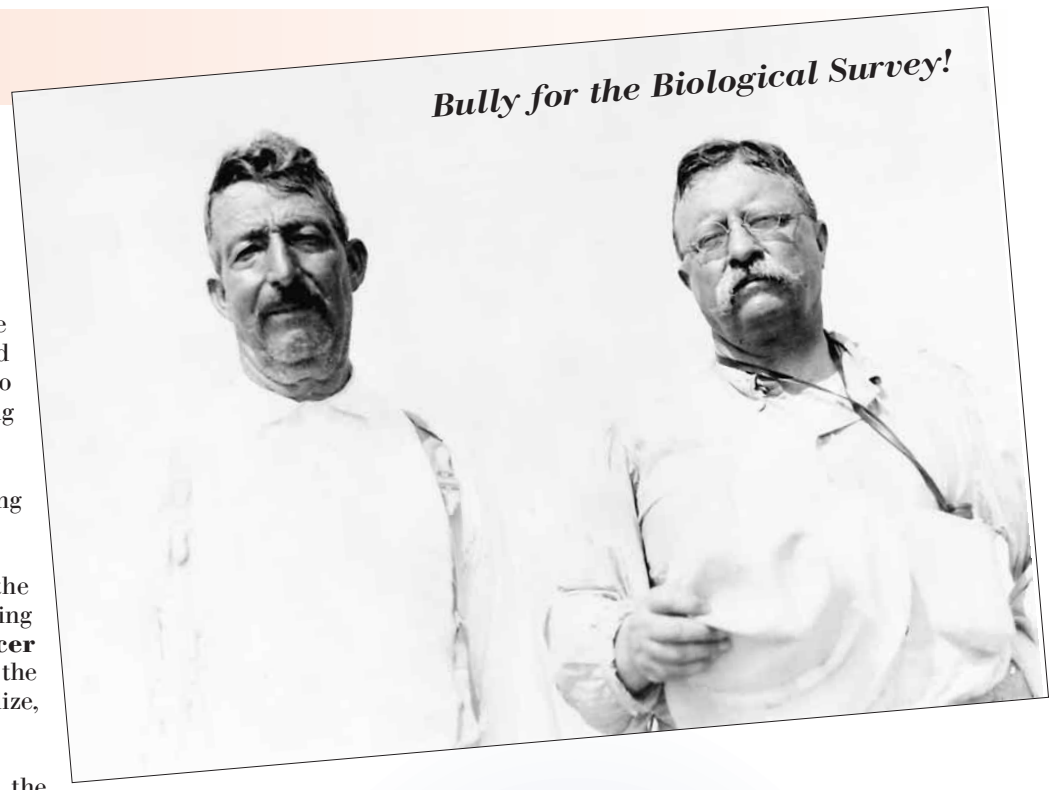
Bully for the Biological Survey!



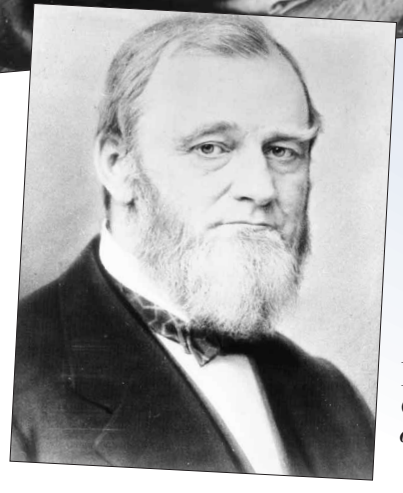
Theodore Roosevelt: *The 26th President of the United States, noted conservationist, hunter, and birder, set aside the first national wildlife refuge at Pelican Island, Florida, on March 14, 1903. Roosevelt is shown here with Audubon Game Warden William Sprinkle on Breton Island National Bird Reservation in 1915. Before leaving office in 1909, Roosevelt created 53 bird and mammal reservations throughout the United States. He was a personal friend of Bureau of Biological Survey Chief Clinton Hart Merriam and an ardent supporter of the bureau's work.*

Father of Refuges

J. Clark Salyer II: *The tireless chief of the Service's Wildlife Refuge Program for nearly 30 years starting in 1934, Salyer was involved in the acquisition and expansion of numerous refuges. He is widely regarded as the "Father of the Refuge System."*

Silent Spring

Rachel Carson: *Hired as a junior aquatic biologist in 1935, Carson remained with the Service for 17 years before resigning to pursue a literary career. As the internationally acclaimed author of* The Sea Around Us *and* Silent Spring, *she enhanced our understanding of the complexity of life. Much of the research cited by Carson in her books to illustrate the effects of pesticides on humans and wildlife was performed by Service scientists as early as the mid-1940s.* *See pages 18 and 71.*



First Commissioner

Spencer Fullerton Baird: *Appointed professor of natural history at Dickinson College when only 23 years old, Baird went on to become an internationally recognized scientist and the Secretary of the Smithsonian National Museum in 1878. His concern about the decline of the fishing industry in New England spurred him to propose a plan for a federal inquiry into fishery problems. Baird's initiative led to the creation of the U.S. Commission on Fish and Fisheries and his appointment as its first commissioner in 1871.*

Where in the World International Wildlife Affairs

Mary Maruca

The Fish and Wildlife Services' international affairs activities evolved over the 20th Century as Congress mandated federal agencies to establish agreements with other nations for the protection of internationally traded species and migratory wildlife.

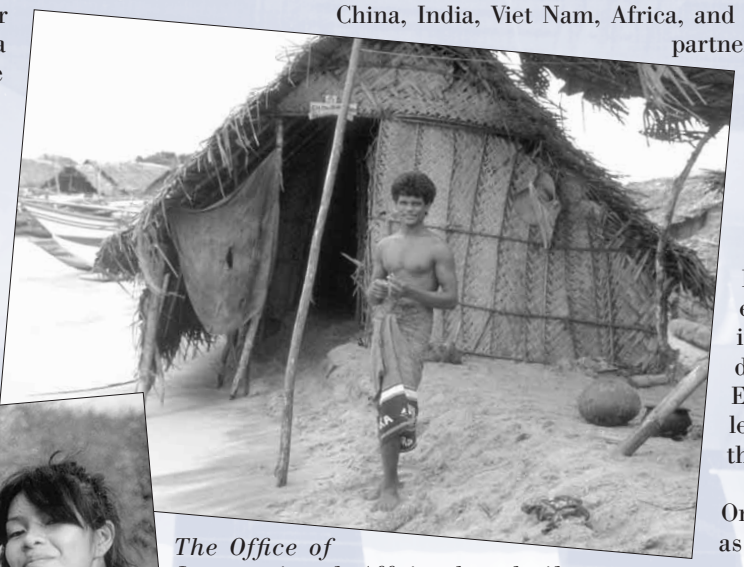
As early as the 1900 passage of the Lacey Act, which regulates trade and commerce in foreign birds or animals, the precursor of the Service assumed responsibility for regulating activities that extended beyond our boundaries. In 1918, the first of what would be four migratory bird treaty acts came into existence. The pioneering agreement with Great Britain recognized that wildlife knows no boundaries—that nations' management of migratory birds affects their survival all along their migration routes. Subsequent treaties with Mexico, Japan, and Russia furthered the legislation's reach, demonstrating that birds require global conservation.

The 1970s heralded extraordinary opportunities for international environmental stewardship. The 1973 Endangered Species Act established the Western Hemisphere Convention and authorized U.S. participation in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The Marine Mammal Protection Act legislated for the sustainability of sea otters, walruses, manatees, and other wild sea life. The Convention on Wetlands of International Importance (Ramsar) asked us to conserve fragile wetlands, the cradle of life.

The US/USSR Agreement on Cooperation in the Field of Environmental Protection provided hope of environmental détente during the long years of the Cold War. These seminal pacts legislated a new paradigm—that wetlands, wildlife, migratory routes, trade, ecosystems (aquatic and terrestrial), and the cultures that thrived because of them were all part of an integrated living system and that to alter this system was to alter the delicate balance of its sustainability.

Other international activities arose out of research with animal damage control. In the 1970s, the federal budget for such programs amounted to $3.5 million. As we developed ways to more precisely pinpoint and deal with nuisance populations in the United States, without wiping out associated wildlife, the U.S. Agency for International Development funded Service assistance abroad. In Pakistan and Bangladesh, we helped control wild boar populations. In Africa, we assisted with quelea birds, another agricultural pest, having developed control techniques on our own blackbirds. The term "gopher chokers" was coined from these and other animal damage control activities.

During the past 20 years, international wildlife programs have grown from an opportunistically driven series of activities by a handful of individuals to an organized, focused effort to administer limited conservation funds worldwide. In keeping with the Service's domestic move to an ecosystem approach, the programs of the Office of International Affairs are looking at possibilities for similar steps worldwide. Having studied the relationship between zones of heaviest wildlife trade and greatest biodiversity, the programs are looking at establishing conservation hubs, co-located with pre-existing federal and non-federal organizations in the world's identified ecosystems. The programs also stress our hemisphere first, as a pilot project, in keeping with the legislation that authorizes the Service's international presence.



The Office of International Affairs has built many conservation relationships throughout the world. A local fisherman in Sri Lanka, local people in Russia, government officials in Madagascar: the International Affairs program is active around the world, working for conservation at the grass-roots level as well as through diplomatic channels. Photo at left by Fred Bagley. Photo above by Herb Raffaele.

The Office of International Affairs also is developing new concepts in partnership. For example, the 1997 CITES Appendix II listing of sturgeon could have threatened the caviar industry. Instead, the industry was included in a massive outreach campaign to notify all partners of the impacts of the impending listing and to work with them rather than against them. The same model has been used effectively with goldenseal, a native U.S. medicinal herb likewise listed as a CITES Appendix II species.

The list of the international program's non-federal partners is long and extends to small, conscientious non-government organizations on the ground in Central America, China, India, Viet Nam, Africa, and elsewhere. The Service also works in partnership with large organizations whose interest in wildlife and mobility enable them to quickly funnel research dollars to areas of critical need in the developing world. These groups include the World Wildlife Fund, Wildlife Conservation Society, Safari Club International, and the Humane Society. These mechanisms enable a small band of dedicated individuals to vastly multiply the core dollars for international conservation. Every dollar of federal funds receives at least a $2 match from partners for on-the-ground conservation worldwide.

On the policy front, industries also are assuming responsibility for wildlife sustainability. Receipts from a special fee for permits to hunt polar bears are funneled directly into polar bear research, helping to sustain healthy populations in the wild. And "pandamania" in the zoo community is turning into a windfall for wild giant pandas. The Service's new panda policy enables zoos to contribute research and money to the conservation of this highly endangered species on its wildland habitat in China. These efforts are carried out with respect for the scientific expertise of the nation responsible for the animals' well being. Money from the San Diego Zoo for panda conservation in China is applied according to China's National Plan for the animals' conservation.

The new millennium provides an opportunity for thoughtful, directed action—for developing new partners and new conservation policies that optimize species sustainability in the numerous natural communities the world's diverse wildlife call home. We expect to see the Service's international programs do more of what they do well—using minimum funding for maximum good and trying out a few new techniques.

Aldo Leopold, a preeminent conservation leader of the 20th Century, described a vision that could serve as a creed for international wildlife activities: "We realize the indivisibility of the earth—its soil, mountains, rivers, forests, climate, plants, and animals—and respect it collectively not only as a useful servant but as a living being, vastly less alive than ourselves in degree, but vastly greater than ourselves in time and space—a being that was old when the morning stars sang together, and when the last of us has been gathered unto his fathers, will still be young."

Looking Back

Continued from the previous page

1950 The Federal Aid in Sport Fish Restoration Act, commonly known as the Dingell-Johnson Act, is passed to create a program for restoring and improving America's fishery resources. It is patterned after the Pittman-Robertson Act passed in 1937.

1966 The first piece of comprehensive legislation addressing the management of refuges, the National Wildlife Refuge System Administration Act, is passed. The Act provides new guidance for administering the refuge system and requires that proposed uses on refuges must be compatible with refuge purposes.

1970 The Bureau of Commercial Fisheries, a branch of the Fish and Wildlife Service, is transferred to the Department of Commerce and renamed the National Marine Fisheries Service.

1973 The Endangered Species Act is passed by Congress to protect endangered plants and animals. Building on legislation passed in 1966 and 1969, the new law expands and strengthens efforts to protect species domestically and internationally. The Fish and Wildlife Service and the National Marine Fisheries Service (Department of Commerce) assume responsibility for administering the act.

1980 Passage of the Alaska National Interest Lands Conservation Act dramatically increases the size of the National Wildlife Refuge System, adding nine new refuges, expanding seven existing refuges, adding more than 53 million acres of land, and designating numerous wilderness areas.

1997 With passage of the National Wildlife Refuge System Improvement Act, Congress explicitly states that the mission of the National Wildlife Refuge System is wildlife conservation, identifies a number of wildlife-dependent recreational uses that will be given priority consideration, and clarifies the process for determining the compatibility of refuge uses.